

### REMARKS

In the Office Action, claims 1-7 are rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant Admitted Prior Art in view of Fukushima. Claims 8-21 are withdrawn from further consideration.

The gist of the instant invention is to provide a method for testing a printed circuit board to overcome the drawbacks of using a conventional spring probe which has a complicated structure and is difficult to manufacture with a small size. Accordingly, a dedicated testing board is manufactured with protrusive metal points corresponding to the test points of the printed circuit board to be tested. The protrusive metal points have coordinates identical to the test points and are connected to the connectors of the test nodes on the tester through the layout on the dedicated testing board and an external flat cable. A pressure sensitive conductive rubber layer is inserted between the protrusive metal points and the test points. By pressuring the dedicated testing board, good contact between the protrusive metal points and the test points is achieved for testing the printed circuit board because of the conductive rubber layer.

In the office action, the examiner rejects claims 1-7 on the ground that the Applicant Admitted Prior Art has taught a process of testing printed circuit boards including manufacturing a testing board having protrusive metal points by referring to paragraphs [0004] and [0006]. Applicant respectfully contends that the rejection is unwarranted because the prior art described in the specification does not teach manufacturing a testing board having protrusive metal points. **Throughout the described prior arts, only testers using the conventional spring probes are disclosed.**

The followings are excerption of the two original paragraphs [0004] and [0006] from the specification:

*[0004] The dedicated testing chooses points to be tested according to circuit layout of a tested printed circuit board and **chooses proper spring probes according to the size of the points to be tested** and the distance between adjacent points to be tested. Two principles are employed in choosing the spring probes: (1) whether or not, the spring probes include features suitable to test the points; (2) after the receptacles of the probes inserted in the fixing board of test fixture, no short circuit happened. The diameter of receptacles for the spring probes are within the range between 0.45m/m to 1.65m/m.*

*[0006] When using the dedicated tester, the test fixture has to be fixed to the press of the tester and the connectors on the test fixture are connected to the tester with flat cables so that each probe is connected to a test node in the tester. When the press is lowered, **the spring in the probe** is applied by a force so that the plunger of the probe and the point to be tested on the printed circuit board is are electrically connected such so that the points to be tested on the printed circuit board become conductive with test node in the tester because of close contact. This can be used to test the open/short of each trace of the layout*

As can be seen, the paragraphs only discussed the **drawbacks and difficulties that applicant encountered in using conventional test fixture on which spring probes are used**. There is absolutely no suggestion of the **protrusive metal points** of the instant invention as claimed in claim 1. **It should be noted that the protrusive metal points are manufactured using printed circuit board process and the size and density of the**

**protrusive metal points can be as small as the testing points** (testing pads). The spring probe as discussed in paragraphs [0004] and [0006] includes a receptacle, a barrel, a plunger and a spring between plunger and barrel as described in paragraph [0007]. The receptacles are inserted in holes of the testing board and it is difficult to reduce the size of the spring probe.

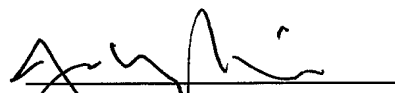
Fukushima teaches a pressure sensitive element and a stylus pen with pressure sensitive function. The pressure sensitive element comprises a pressure transmittable member in an annular plate shape for transmitting the pressure in the axial direction of the pressure sensitive element, a pressure sensitive member (28), in an annular plate shape, arranged coaxially in parallel to the pressure transmittable member. **It should be noted that Fukushima neither discloses nor suggests manufacturing a testing board with protrusive metal points for testing.** Therefore, it is not logical for a person of ordinary skill in the art to combine the applicant admitted prior arts with Fukushima to reach the instant invention. Furthermore, **the pressure sensitive conductive rubber as recited in claim 1 is *conductive rubber for ensuring excellent electrical contact* between the protrusive metal points and the testing points. The pressure sensitive member (28) of Fukushima is not conductive and can not provide good electrical contact as recited in claim 1 of the instant invention.**

In response to the office action, claim 1 is amended to particularly point out and distinctly claim the subject matter of the invention in a patentable way to overcome the rejections under 35 U.S.C. §103(a). More specifically, claim 1 recites the limitations of manufacturing a testing board **having protrusive metal points corresponding to the**

points to be tested on the circuit board; inserting at least one pressure sensitive conductive rubber layer between the testing board and the printed circuit board to be tested; and testing the points to be tested on the printed circuit board by pressuring the pressure sensitive conductive layer using a press of the tester to electrically connect the protrusive metal points and the points to be tested. As discussed above, neither the admitted prior arts nor the cited reference has disclosed, suggested or anticipated the limitations. Claim 1 should be allowable. By virtue of dependency, claims 2-7 should also be allowable.

From the foregoing discussion, it is clear that the instant invention differs from the cited prior arts. The physical difference results in different effects and is not obvious. The amended claims 1-7 are in full condition for allowance. The specification has been amended to correct a few editorial and grammatical errors. A few typos in the descriptions of the steps in Figures 1-3 are also corrected as described in the above amendment. Both replacement sheets and annotated sheets showing changes are submitted for approval. Prompt and favorable reconsideration of the application is respectfully solicited.

Respectfully submitted,



Jason Z. Lin  
Agent for Applicant  
Reg. No. 37,492  
(408) 627-4082